

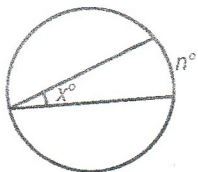
GEOMETRY FORMULA SHEET – PAGE 1

Formulas that you may need to solve questions on this exam are found below.

You may use calculator π or the number 3.14.

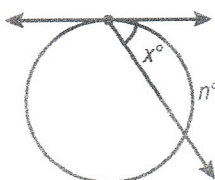
Properties of Circles

Angle measure is represented by x . Arc measure is represented by m and n . Lengths are given by a , b , c , and d .



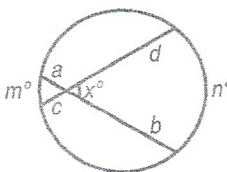
Inscribed Angle

$$x = \frac{1}{2}n$$



Tangent-Chord

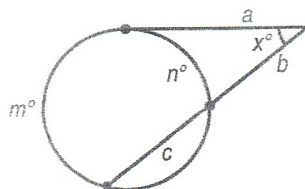
$$x = \frac{1}{2}n$$



2 Chords

$$a \cdot b = c \cdot d$$

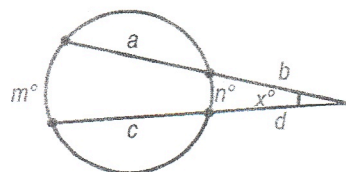
$$x = \frac{1}{2}(m + n)$$



Tangent-Secant

$$a^2 = b(b + c)$$

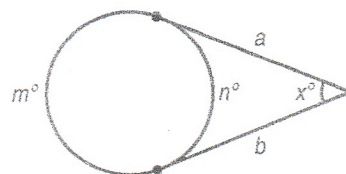
$$x = \frac{1}{2}(m - n)$$



2 Secants

$$b(a + b) = d(c + d)$$

$$x = \frac{1}{2}(m - n)$$

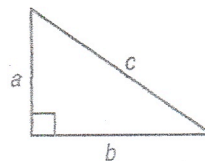


2 Tangents

$$a = b$$

$$x = \frac{1}{2}(m - n)$$

Right Triangle Formulas



Pythagorean Theorem:

If a right triangle has legs with measures a and b and hypotenuse with measure c , then...

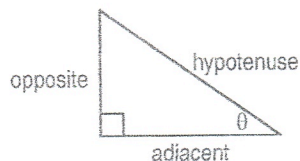
$$a^2 + b^2 = c^2$$

Trigonometric Ratios:

$$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$



Coordinate Geometry Properties

Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Point-Slope Formula: $(y - y_1) = m(x - x_1)$

Slope Intercept Formula: $y = mx + b$

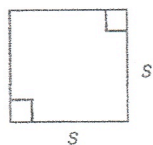
Standard Equation of a Line: $Ax + By = C$

$45^\circ - 45^\circ - 90^\circ$ hyp = leg $\sqrt{2}$
 $30^\circ - 60^\circ - 90^\circ$ hyp = 2 · short
 long = short $\cdot \sqrt{3}$

GEOMETRY FORMULA SHEET – PAGE 2

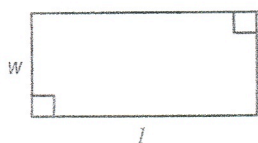
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You may use calculator π or the number 3.14.

Plane Figure Formulas



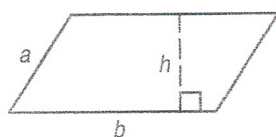
$$P = 4s$$

$$A = s \cdot s$$



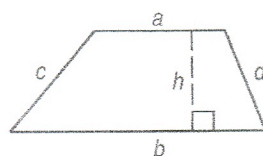
$$P = 2l + 2w$$

$$A = lw$$



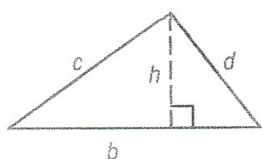
$$P = 2a + 2b$$

$$A = bh$$



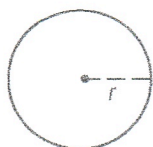
$$P = a + b + c + d$$

$$A = \frac{1}{2}h(a + b)$$



$$P = b + c + d$$

$$A = \frac{1}{2}bh$$

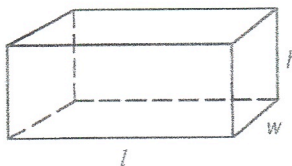


$$C = 2\pi r$$

$$A = \pi r^2$$

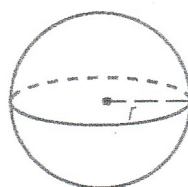
Sum of angle measures $= 180(n - 2)$,
where n = number of sides

Solid Figure Formulas



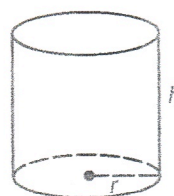
$$SA = 2lw + 2lh + 2wh$$

$$V = lwh$$



$$SA = 4\pi r^2$$

$$V = \frac{4}{3}\pi r^3$$



$$SA = 2\pi r^2 + 2\pi rh$$

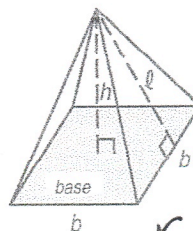
$$V = \pi r^2 h$$



$$SA = \pi r^2 + \pi r l$$

$$SA = \pi r^2 + \pi r \sqrt{r^2 + h^2}$$

$$V = \frac{1}{3}\pi r^2 h$$



$$SA = (\text{Area of the base}) + \frac{1}{2}(\text{number of sides})(b)(\ell)$$

$$V = \frac{1}{3}(\text{Area of the base})(h)$$

$$r = \frac{1}{2}b$$

Euler's Formula for Polyhedra:

$$V - E + F = 2$$

vertices minus edges plus faces = 2

$$h^2 = l^2 - r^2$$

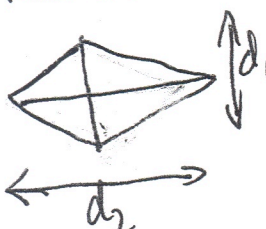
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single interior angle
angle $= \frac{180(n-2)}{n}$

sum of exterior $= 360^\circ$

single exterior angle
angle $= \frac{360^\circ}{n}$

Kite and Rhombus



$$r = \frac{1}{2}d_1, d_2$$